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the address of some member upon whom I might call. Some of the most delightful and lasting friendships have had their beginnings when, wholly unannounced, some Cooper Club member has dropped in at my house with the 'apology' that he was passing through town and had seen my name in the Club roster and thought he would look me up. The value of this list is perhaps greatest to those of us who reside at some distance from the Club centers and are thereby deprived from attending meetings; for through it we can get in touch with other sequestered members in nearby towns. May the annual roster continue to grow until it appropriates not only ten but twenty pages of our magazine!"

A wonderfully interesting sketch of the history and accomplishments of the American Ornithologists' Union appears in a late issue of *The American Museum Journal* (vol. XVIII, 1918, pp. 473-483). This is from the pen of Dr. T. S. Palmer, the new secretary of the Union, and includes among other notable features an assembled photograph of the founders and officers of the Union as they appeared thirty-five years ago. In this connection it is a pleasure to be able to present herewith a group of certain prominent A. O. U. members, as photographed by Walter K. Fisher at the 1917 A. O. U. meeting. Three of these, Dr. A. K. Fisher, Mr. William Brewster and Mr. Charles F. Batchelder, appeared in the group of 1883.

Cooper Club members and other ornithologists will be interested to learn that a movement has been started to establish an American Society of Mammalogists. The committee on organization consists of Dr. Hartley H. T. Jackson, Chairman; Dr. Glover M. Allen, Dr. J. A. Allen, Dr. Joseph Grinnell, Mr. Ned Hollister, Mr. Arthur H. Howell, Mr. Wilfred H. Osgood, Mr. E. A. Preble, and Dr. Walter P. Taylor. Incomplete plans call for an annual meeting, sectional meetings, and the publication of a magazine of both a popular and technical nature. Life histories, ecology, evolution, and other phases of mammalogy will receive attention as well as taxonomy. It is hoped that an organization meeting can be held this spring (1919). Anyone who desires to join or is interested in the organization may address the chairman of the committee, U. S. Biological Survey, Washington, D. C.

We are greatly pleased to be able to announce that favoring circumstances have permitted Mr. W. L. Dawson to again take up work on his *Birds of California*. The preparation of the text is now well under way, the gathering of the material for illustration having already been practically completed.

Avifauna no. 13 has gone to press—a pretty convincing piece of evidence that good times are indeed returning. This number is J. R. Pemberton's *Second Ten Year Index to The Condor*. The question has been raised as to the propriety of publishing such an index as one of the Avifauna series, instead of separately. Without going into the reasons here, it has seemed on the whole best to follow the precedent set when the first ten year index was issued, namely to give it a number in the Avifauna series.

PUBLICATIONS REVIEWED

A REVIEW OF THE ALBATROSSES, PETRELS, AND DIVING PETRELS [being contribution number 12 based upon the expedition of the California Academy of Sciences to the Galapagos Islands, 1905-1906], by LEVERETT MILLS LOOMIS. Proc. Calif. Acad. Sci., 4th ser., vol. 2, pp. 1-187, pls. 1-17; issued April 22, 1918.

We learn from the "historic sketch", which comprises chapter one of the paper under review, that Elliott Coues, of all previous authors, has contributed most importantly to our systematic knowledge of the Tubinares. His work, in the light of later developments, has proven most scholarly; yet the chief of his contributions was published in 1864 and 1866, when he had not yet attained his twenty-fourth year. Loomis thus at the outset pays appreciative tribute to the chief of his predecessors in the field he has chosen for his own special study.

Under the heading "geographic distribution", among the more striking generalizations is that barriers to pelagic species of birds are to be found in the limits of food-producing areas. While there is good reason for recognizing control by temperature also, a third factor of importance concerns historical circumstances. Loomis divides the oceanic portion of the earth's surface into "distribution areas", classified into three different grades, namely, *superarea*, *area*, and *subarea*, based on the occurrence of species at their breeding stations. These areas are demonstrated on the basis of the Tubinares of the world. Of the subareas there are twenty-five all told, and one of these is the "Californian Subarea", with six diagnostic species.

The subject of migration is gone into at some length. Interesting cases are described, of the long "transequatorial" emigrations of several of the shearwaters from the South Pacific to the North Pacific. There are also regular emigrations, though less extended as a rule, of species from the north-

ern hemisphere. ". . . Migration is simply an exodus, followed by a return movement to breeding grounds." ". . . Bird migration is the adjustment of the bird population of the world to the seasons . . . , the evolution of the seasons being the remote cause of bird migration." The more speculative portion of Loomis's paper, for example as to how migrating birds find their way, are stimulative, and will always need to be taken account of by future students in the field, but they leave the reader in darkness at many turns. We note, in this connection, that John B. Watson's conclusions are discounted. Loomis can see no good reason for ascribing to birds a sixth sense by which they can find their way. They are guided solely, in his opinion, by ordinary faculties intensified, plus an "innate desire to travel." An admittedly weak place in this guidance theory concerns the return-migration of birds nesting on remote oceanic islands.

The detailed descriptions of molts and plumages, based in many cases upon long series of specimens, constitute perhaps the most important feature of the paper. We are quite convinced that Loomis is right in placing in synonymy a number of names, the original characterizations accompanying the proposal of which include only points of color just such as is demonstrated in available material to be due to age, fading, or loss of "bloom". No one who in the future attempts to deal systematically with the Tubinares can allow himself to overlook these important factors; and to become thoroughly familiar with them requires a great amount of close study and an exercise of mature judgment.

In this connection, Loomis lays great stress on what appears to him to be in this order of birds a relatively very common state of double coloration, or "dichromatism". In certain cases he is inclined to look upon dichromatism as subject to geographic factors, so that a light phase of a given species might predominate or occur exclusively in one area, and a dark phase of the same species in another. Here we are tempted to believe that the dichromatism idea has become confused with that of true geographic variation, the latter leading to the origin of new species. Dichromatism undoubtedly does exist in certain tubinarine birds, but there is a chance that Loomis has inferred its existence in cases where adequate material is still lacking to completely establish the fact.

Mr. Loomis's special method of handling geographic variation leads him to place under the synonymy of *Oceanodroma leucorhoa* no less than five current names of petrels, namely *socorroensis*, *kaedingi*, *monorhis*, *beldingi*, and *beali*. This case illustrates his tenet that "the subspecies theory" is "discarded as a theory that has outlived its usefulness." In other words only full species are given systematic recognition, the criterion of intergradation, as here specially applied, serving as the basis of exclusion. Geographic variation is handled as of coordinate importance with age, sexual and seasonal variation. It is as if the process of evolution itself had been denied!

On the other hand we cannot but heartily commend Loomis's conservative stand in regard to the recognition of genera. The futility of repeated subdivision of genera down to the only logical limit, the one-species genus, is well set forth. There can in our mind be little well-grounded defense of the principle lately put into practice by Mathews and others whereby it is concluded that two species occupying the same area must *ipso facto* belong to two separate genera.

Cooper's California record of the Yellow-nosed Albatross (*Thalassogeron culminatus*) on the basis of a skull found on the seabeach near San Francisco is corroborated by Mr. Loomis. The skull, with bill largely intact, was carefully examined previous to its destruction in the fire of 1906. The species thus becomes re-instated on our regular list of California birds, it having heretofore reposed among the hypotheticals. Cooper's record of the Giant Fulmar from Monterey is not, however, credited.

Several tubinarine birds are recorded from the high seas some hundreds of miles off the coast of California whose names do not appear on our state list nor even on the North American list. Of course the limits of a state with a sea coast can only be set at a greater or less distance offshore in arbitrary fashion, but it would seem to the undersigned that they should not extend beyond say one hundred miles outside the headlands or outermost islands. It is perhaps a somewhat different matter as regards inclusion in the North American list.

The care displayed throughout in grammatical construction, spelling and final proof-reading, has resulted in a production well-nigh above criticism from these standpoints. Indeed, it may be stated with some assurance that no ornithological paper has appeared in years so free from typographical

blemishes. But that absolute perfection is beyond human reach is occasionally demonstrated even in the present painstaking product. For example, grammatical lapses in the following quotations from page 164 are apparent: "The duties of incubation were shared by both sexes; in two instances the male was setting and in three the female."

Whatever of misgiving may be aroused in the mind of the reader of Loomis's paper in regard to some of the theoretical interpretations and to the peculiarity in handling geographic variation, the paper must be commended for the extraordinary care exercised in gathering and publishing the multitude of facts therein made available in regard to the relatively little known Tubinares.—J. GRINNELL.

THE HAWKS OF THE CANADIAN PRAIRIE PROVINCES IN THEIR RELATION TO AGRICULTURE, by P. A. TAVERNER. Canada Geological Survey, Museum Bulletin No. 28, Biological Series no. 7, August, 1918, pp. 1-14, 4 plates (8 colored illustrations), 7 figs. in text.

It is to be hoped that this bulletin will be given the widest possible circulation, especially among the farmers of the region covered, for although the treatment of the subject is necessarily of the briefest, the author has nevertheless compressed within these few pages much accurate information upon a generally misunderstood subject. The written descriptions and the illustrations should together suffice for ready identification of the species by the layman, and the nature of the food of each is concisely indicated. Emphasis is rightly placed upon the harmlessness of most hawk species, as regards human interests, and the absolute benefits accruing to the farmer through the activities of many of them.

Such educational work as this is valuable and should be pushed farther. It has been neglected in the past with results familiar to all ornithologists. The fate of the White-tailed Kite in California and of the Mississippi and Swallow-tailed kites in Illinois are fair examples of what is happening elsewhere throughout the country,—the destruction of beautiful and harmless birds through ignorance and thoughtlessness. Printed matter calculated to offset such action is of the scarcest, and seldom reaches the individual who should be convinced of the error of his ways. Of United States government publications, the one and only report adequately covering the subject, Dr. A. K. Fish-

er's *Hawks and Owls of the United States*,—it needs no eulogy here—which should have been forced upon the attention of every farmer and sportsman in the country, has lapsed into the position of a prize for the ornithological bibliophile! As such it now fails of useful service to any important degree.

On the other hand, there are popular magazines of wide circulation on whose pages may be seen advertisements of ammunition dealers, showily placed and attractively illustrated, calling upon the sportsman to go forth and shoot "hawks", propaganda that reach scores of people where there is one who ever hears a word on the other side. Audubon societies as a rule seem to have paid but scant attention to this phase of bird protection, the members thereof doubtless having for the most part but hazy notions of the true character of most predaceous birds; and Federal and state biologists have lately found all-engrossing occupation in the destruction of "noxious" animals—some of which used to be kept in bounds through the assistance of the formerly abundant Raptorial. So, with most people lacking the knowledge to discriminate between harmful and beneficial species, usually in ignorance even that there are any useful kinds, and with the ever-present irresponsible gunner eager to shoot at such a mark, even should there be laws against doing so, the hawks suffer in consequence. For all of these reasons it is a pleasant privilege to call special attention to Mr. Taverner's excellent paper, and to urge the desirability of the broadcast distribution of reports such as this one is.—H. S. SWARTH.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

AUGUST.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology at 8 P. M., August 15, 1918. Dr. Evermann presided and the following members were present: Messrs. Carriger, Grinnell, Lastreto, Loomis, Noack, Swarth and Trenor; Mesdames Allen, Grinnell, Kluegel, Schlesinger; visitors, Miss Daniels, Miss Guthrie, Mr. Kelly, Mrs. Swarth, and Miss Hittell.

By special request the program preceded the business meeting. Mr. Leverett M. Loomis read an instructive paper on bird migration, in which he ascribed conflicting observations as due to reports of delayed migration rather than actual flight, and